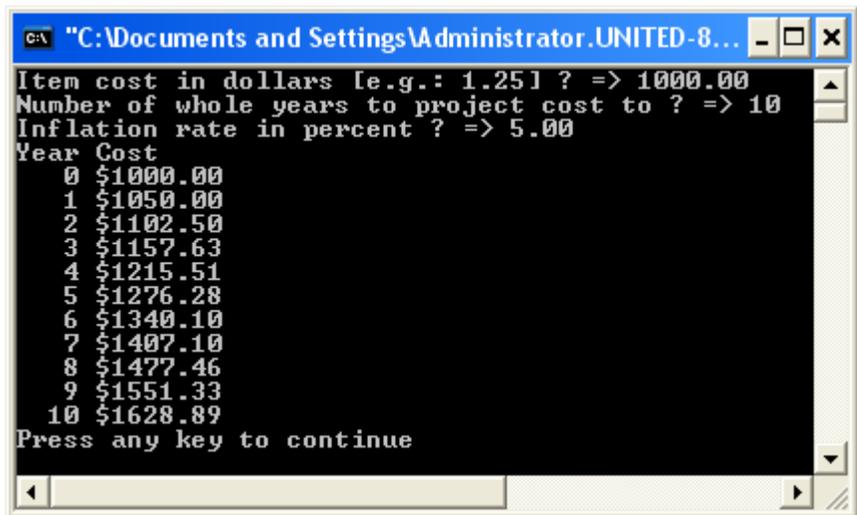


This is a **Programming Project** – you may not collaborate. See COMPSCIDeptINST1531.1.

Do Absolute C++ 3<sup>rd</sup> Edition Chapter 2 Problems 1, 2, and 4 (pages 87 – 88), as modified to produce the output shown below. You must write three *separate* programs (and you must read the problem description in the text!).

Page 87, Problem 1:

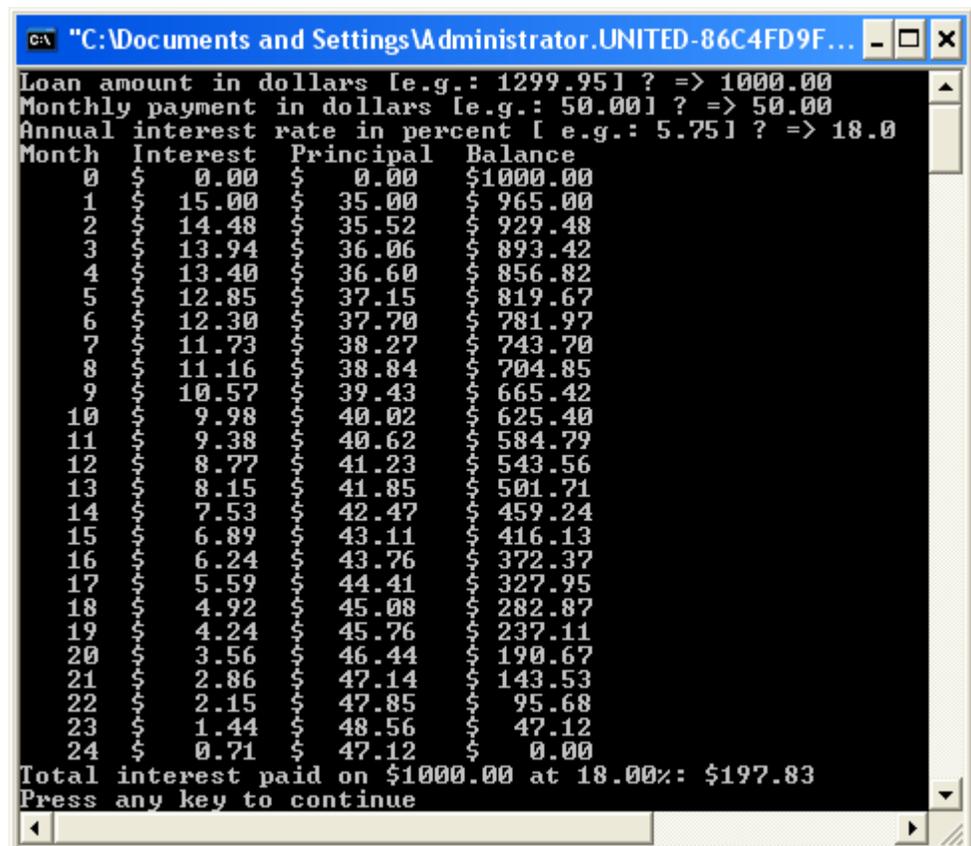
Write a program in a single source code file named `ch2proj1.cpp` (a header file is not required). Show the item cost per year starting from now (year zero).



```
C:\Documents and Settings\Administrator.UNITED-8...
Item cost in dollars [e.g.: 1.25] ? => 1000.00
Number of whole years to project cost to ? => 10
Inflation rate in percent ? => 5.00
Year Cost
0 $1000.00
1 $1050.00
2 $1102.50
3 $1157.63
4 $1215.51
5 $1276.28
6 $1340.10
7 $1407.10
8 $1477.46
9 $1551.33
10 $1628.89
Press any key to continue
```

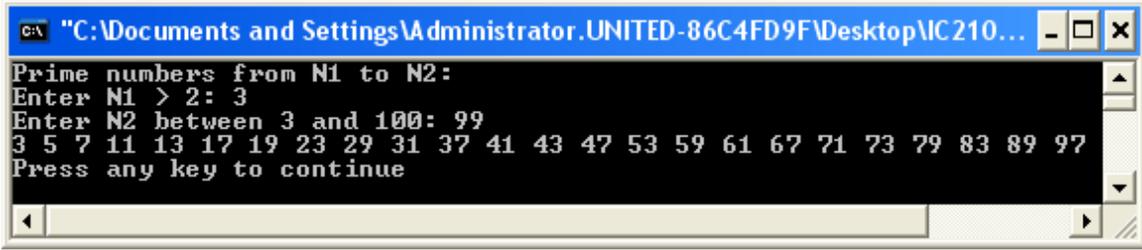
Page 87, Problem 2:

Write a program in a single source code file named `ch2proj2.cpp` (a header file is not required). Show the monthly interest payment, monthly principal payment, and balance remaining at the end of each month starting with now (month zero).



```
C:\Documents and Settings\Administrator.UNITED-86C4FD9F...
Loan amount in dollars [e.g.: 1299.95] ? => 1000.00
Monthly payment in dollars [e.g.: 50.00] ? => 50.00
Annual interest rate in percent [e.g.: 5.75] ? => 18.0
Month Interest Principal Balance
0 $ 0.00 $ 0.00 $1000.00
1 15.00 35.00 965.00
2 14.48 35.52 929.48
3 13.94 36.06 893.42
4 13.40 36.60 856.82
5 12.85 37.15 819.67
6 12.30 37.70 781.97
7 11.73 38.27 743.70
8 11.16 38.84 704.85
9 10.57 39.43 665.42
10 9.98 40.02 625.40
11 9.38 40.62 584.79
12 8.77 41.23 543.56
13 8.15 41.85 501.71
14 7.53 42.47 459.24
15 6.89 43.11 416.13
16 6.24 43.76 372.37
17 5.59 44.41 327.95
18 4.92 45.08 282.87
19 4.24 45.76 237.11
20 3.56 46.44 190.67
21 2.86 47.14 143.53
22 2.15 47.85 95.68
23 1.44 48.56 47.12
24 0.71 47.12 0.00
Total interest paid on $1000.00 at 18.00%: $197.83
Press any key to continue
```

Page 88, Problem 4: Write a program in a single source code file named `ch2proj4.cpp` (a header file is not required). Show all primes in the interval  $[2 < N1, N2 < 100]$ .



```
"C:\Documents and Settings\Administrator\UNITED-86C4FD9F\Desktop\IC210... - _ X
Prime numbers from N1 to N2:
Enter N1 > 2: 3
Enter N2 between 3 and 100: 99
3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97
Press any key to continue
```

---

Turn in:

- (1) A hardcopy source code listing of each program, to which is stapled:
- (2) A hardcopy screen snapshot of each program running using the input shown above.

You must also send a single email to [stahl@usna.edu](mailto:stahl@usna.edu) as follows:

- (1) Subject: IC210 Lab24 <your last name>
- (2) Include the three source code files `ch2proj1.cpp`, `ch2proj2.cpp`, and `ch2proj4.cpp` as attachments to the email. I **do not** want `.h` files, `.exe` files, etc. Just the `.cpp` files as attachments.

Your name and alpha code must appear on each item turned in to receive credit for it.